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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

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1. 300-kw-Tube Project

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- a. There was some confusion in the minds of the Germans about the proper designation of this project. This confusion arose because the GI-250 tube had originally been conceived as a 300-kw tube and this project was loosely spoken of as "the 300-kw-tube project". There was, however, another 300-kw tube developed by the Germans which had nothing to do with the GI-250. This is only remembered now as a 300-kw tube; no type number is known.
- b. Description
- 1) The 300-kw tube was a modulator tube with a thorium cathode and had been in use before, probably as the output amplifier for anode modulation of a transmitter. It was an air-cooled tube with a radiator 300 mm high and 250 mm in diameter. The overall height of the tube was 750 mm. It operated as a triode.
 - 2) The cathode was 40 mm in diameter. The heater consisted of four hairpins of tungsten wire one mm thick, containing 1.8 percent thorium. The four heater pins were held together by a molybdenum plate. This plate served only to keep the filaments properly spaced. In order to compensate for expansion, a pin sitting in the center of the molybdenum plate was freely movable within a quartz jacket. There was no center support along the whole length of the cathode. Heating was by alternating current.
 - 3) The grid was made of a coil of molybdenum wire (50 mm in diameter) along six supports with a pitch of 3.3 mm. The grid was taken laterally out of the glass envelope. The inside diameter of the anode was 90 mm. Copper cutting edges in hard glass were used for the glass-to-metal seals. No

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exact performance data were available.

- c. The development of this tube was begun and finished in 1949. Approximately 12 tubes per month were then produced. In December 1950, production was running at approximately 10 tubes per month. Development was controlled by Mrs. Serova and supervised by Z.M. Lifshits. Production took place in Shop 3.

2. Construction of a Signal Generator (Prüfsender)

Document X

Leningrad

14 February 1947

* It was determined at today's meeting with Stakhorskiy¹ and Prof. Model that: -

- 1) The signal generator will be further developed for a wave length of 200-400 m. It consists of a self-excited stage with GK 3000, 1 stage with GK 431, 1 stage with 2 x GK 433, and the testing stage...

Comment

Nothing more is known of this task, except that shortly afterwards it was taken out of the Germans' hands altogether, as the Soviets thought that the Germans had more important tasks to fulfill.

3. Klystrons

- a. The task of copying the American klystron 723 A/B was first given by the Soviets to OSW in East Berlin in 1946. A large number of the Germans were deported in October 1946 to the USSR and the task was taken over by Engineer Mikiforov of Svetlana. Difficulties were encountered and the work first received any real impulse when Cherepnin (fnu) came back to Svetlana from Germany in 1948. In the meantime, the German mechanic Behlke had been deported to Moscow, and he was then brought to Leningrad. He was the only man who had had practical experience of some aspects of the production of these klystrons.
- b. Approximately 200 of these klystrons were produced per month, but there was a very high rejection rate. It was evident that it was difficult to get these tubes to oscillate.
- c. The Soviets had difficulty in operating four American lend-lease welding machines that were used in producing these klystrons. Eventually, in spring 1950, an engineer, Devyatkov (fnu) came from Moscow and made some suggestions towards an improvement in the design of these tubes. The reject rate was then lowered to about 30 percent and 500 (not 5,000 as first erroneously reported) good tubes per month were produced. Devyatkov received a Stalin Prize.

- d. A 10-cm glass klystron was not developed in Svetlana, but [redacted] at Fryazino.

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4. Other Development Tasks

The most important development tasks with which the Germans at Svetlana had any connection, up to the end of 1950, have now been mentioned in this series of reports.² There were, however, a few other tasks undertaken in 1948-1950. These tasks were undertaken as work for a diploma by six Soviet students of a Leningrad institute. The Germans had to prepare some designs for this work.

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The tasks concerned the development of 10, 15, 30, 50, and 100-kw transmitter tubes. There were no unusual features to these tubes. They were later produced in small quantities by Svetlana. The two male students of the six were later sent to the Novosibirsk (N 55-02, E 82-53) tube factory.³ G. M. Moskovskaya and Mrs. Serova were responsible for supervising the work of the diploma students.

5. Military Applications

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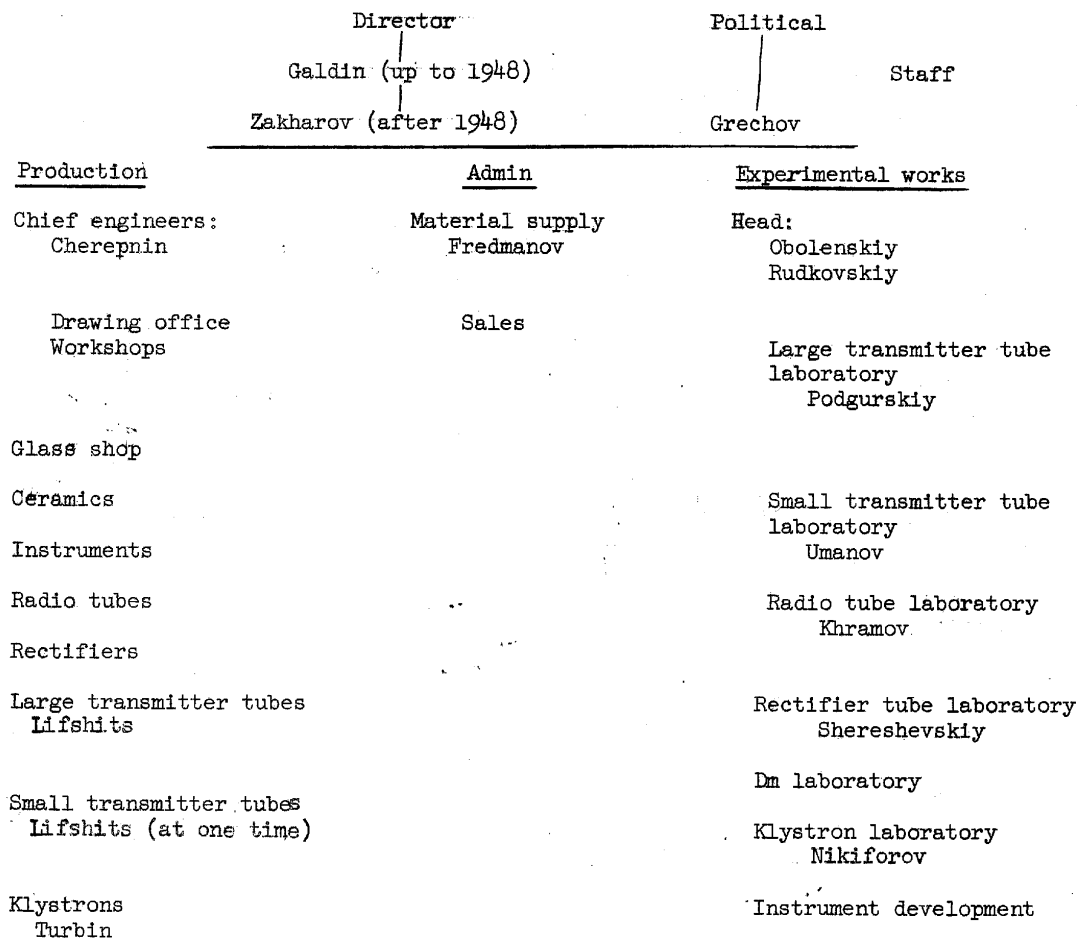
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The Germans thought that:-

1. The G 1250 tube⁴, a modulator tube, was for radar use. The great secrecy surrounding their work tended to support the idea of a military application.
2. The 30-kw tube was to be used for a mobile jamming transmitter. The tube had to be made very stable, so that it could be used in a mobile apparatus. It was also very secret.
3. The 10-kw tube was intended for the same purpose as the 30-kw tube.

6. The organization of Svetlana in 1950 was:-

Plant Directorate



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The plant is divided into a number of shops (Tsekh), the numbers running up to at least 35. The following can be learned about the shops from an issue of the factory newspaper, "Svetlana", dated June 1948:-

- Shop 5 was then building a new type of tube, the RDV, and cathodes for tube T were also produced here.
- Shop 6 had a machine for braiding metallic netting, apparently for grids.
- Shop 8 apparently produced ceramic parts for switches, etc.
- Shop 9 cleaned tube sockets made dirty in the assembly.
- Shop 10 treated further the products of Shop 8.
- Shop 20 supplied cupboards for rectifiers and other frameworks to Shop 10.
- Shop 35 was the central boiler-house.

List of Soviet Personalities

The following were among the Soviets working in Svetlana. The names are arranged in the order of the Cyrillic alphabet. Those underlined are phonetic only; there is written evidence for the spelling of the rest, their names having appeared in "Svetlana", the factory newspaper, on 14 June 1948.

Akindinov, fmu.	Brigade leader
Aleksandrov, N.	Master worker, Shop 8.
Antipov, fmu.	Senior stoker, Shop 35.
Varanits, fmu	Stoker, Shop 35.
Vasilev, V	Writes articles on work of Shop 5.
<u>Gavrilov, fmu.</u>	Chief engineer, Production.

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Galdin, fmu.

Director of the Svetlana factory up to 1948.

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Grechov, fnu.Major, later Lieutenant Colonel in the
MGB. Political supervision of the factory.

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Grunina, fnu.

Assembly, Shop 5.

Dorozhinskaya, V.A.

Editor

Yegorov, fnu.

Stoker, Shop 35.

Yefimov, fnu.

Mounter.

Zhguleva, fnu.

Assembly, Shop 5.

Zhukov, D.V.

Mechanic. Rationalization adviser.

Zakharov, fnu.

Director of Svetlana after 1948.

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Zakharov, fnu.

Stoker, Shop 35.

Ivanov, fnu.

Head of Shop 20.

Kalinovich, A.

Deputy head Shop 35

Kalitukha, fnu.

Assembly, Shop 5.

Lifshits, Z..

Markevich.

In charge of large transmitter tube production

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Mikhaylov, V.

Locksmith.

Mikhaylov, A.

Stoker, Shop 35.

Mikhaylov, L.

Deputy head of a Shop- ? No. 10.

Mikhaylov, M.

Stoker, Shop 35.

Mogilev, fnu.

Mounter.

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Moskovskaya, Galina
Mikhaylovna, Mrs.

Senior Engineer. Soviet responsible
for the 250-kw tube and for the training
of diploma workers in Svetlana.

Nikitin, fnu.

Turner.

Nikiforov, fnu.

Engineer, concerned with klystron
development. Head of klystron
development laboratory.

Nikiforov, fnu.

Stoker, Shop 35.

Obolenskiy, fnu.

Head of experimental department.

Ovchinnikov, fnu.

Mounter.

Osipovich, D.

Wrote article on development of new
250-kw transmitter tube.

Okhanov, fnu.

Worker, Shop 35.

Petrov, A.E.

Brigade-leader. Rationalization adviser.

Petrov, I. P.

Stoker, Shop 35.

Podgurskiy, fnu.

Head of large transmitter tube develop-
ment laboratory.

Polonik, V.

Engineer. Wrote article on Termistory.(sic).

Popov, fnu.

Deputy chief engineer. Production works.

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Potapov, fnu.

Head of Shop 32.

Rudkovskiy, S.I.

Chief designer, experimental department.

Serova, fnu.

Supervised Soviet diploma workers.

Skobelev, Ya. T.

Locksmith. Rationalization adviser.

Smirnov, P.

Worker, Shop 35.

Smirnovaya, fnu.

Brigade-leader, Shop 5.

Sokolovaya, T.

Production worker, Shop 5.

Strizhenko, fnu.

Working in Shop 35.

Turbin, fnu.

Head of klystron production section.

Umanov, fnu.

Head of small transmitter tube development
laboratory.

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Ustinov, fnu.

Stoker, Shop 35.

Ushakov, fnu.

Locksmith.

Khramov, fnu.

Engineer. Concerned with developing glass type TSS-8 for sealing tubes. Head of radio tube laboratory.

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Cherepnin, Nikolay,
Vasilevich, or
Chereplin

Chief technologist.

Shereshevskiy, A.

Engineer, head of the rectifier tube laboratory. Wrote an article on high-voltage thyratrons.

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1. Comment. This name was also received as Stakhovskiy.

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2.

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3. Comment. The Novosibirsk factory was probably the Svetlana Electric Equipment Factory.

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4. Comment. This tube has also been referred to as the GI 250 tube in this series of reports. The correct designation cannot readily be determined.

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5. Comment. S. Ye. Zakharov of Leningrad gave a speech of 1900 words at the 19th Party Congress in October 1952.

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